

Appln. No. 09/901,549
Amendment dated October 20, 2004
Reply to Office Action of July 29, 2004

REMARKS/ARGUMENTS

Reconsideration of the present application, as amended, is respectfully requested.

The July 29, 2004 Office Action and the Examiner's comments have been carefully considered. In response, claims are cancelled and amended, and remarks are set forth below in a sincere effort to place the present application in form for allowance. The amendments are supported by the application as originally filed. Therefore, no new matter is added.

ALLOWABLE SUBJECT MATTER

The Examiner's indication that claims 7 and 8 are in form for allowance and that claims 3 and 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form is acknowledged and appreciated.

PRIOR ART REJECTIONS

In the Office Action, claims 1, 2, 4 and 5 are rejected under 35 USC 102(b) as being anticipated by USP 5,680,205 (Borza). Claims 9 and 12 are rejected under 35 USC 102(e) as being anticipated by USP 6,366,682 (Hoffman et al.). Claims 10 and 13 are rejected under 35 USC 103(a) as being unpatentable over Hoffman et al. in view of USP 6,134,340 (Hsu et al.).

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Claims 11, 14 and 15 are rejected under 35 USC 103(a) as being unpatentable over Hoffman and Hsu in view of USP 6,289,114 (Mainguet).

In response, claim 3 is cancelled and limitations from claim 3 are incorporated into claim 1 to place claim 1 in form for allowance. In addition, claim 6 is cancelled and limitations from claim 6 are incorporated into claim 4 to place claim 4 in condition for allowance. In view of the amendment of claims 1 and 4 and the cancellation of claims 3 and 6, claims 1, 2, 4 and 5 are in form for immediate allowance, which action is earnestly solicited.

In the Office Action, claim 9 is rejected under 35 USC 102(e) as being anticipated by Hoffman et al. Claim 13 is rejected under 35 USC 103 as being unpatentable over Hoffman et al. in view of Hsu et al.

Independent claim 9 is directed to a fingerprint authentication system including a terminal device and a fingerprint authentication device connected to each other via a network. The terminal device includes a fingerprint reader configured to read a fingerprint image of a user, a transmitter (a1 in Fig. 23) configured to transmit a readable image size of the fingerprint reader to the fingerprint authentication device at a time of fingerprint registration, a display (a2 in Fig. 23) configured to

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display a guidance message for requesting an input of a fingerprint of an image size which is transmitted from the fingerprint authentication device at a time of fingerprint registration, and a fingerprint transmitter (a3 in Fig. 23) configured to transmit the fingerprint image read by the fingerprint reader to the fingerprint authentication device. The fingerprint authentication device includes a fingerprint receiver (b3 in Fig. 23) configured to receive the fingerprint image transmitted from the fingerprint transmitter, a transmitting unit (b2 in Fig. 23) which transmits the guidance message to the terminal device in accordance with the readable image size transmitted from the terminal device at the time of fingerprint registration, a synthesizing unit (page 27, lines 9-11) which synthesizes partial fingerprint images which are transmitted from the terminal device at plural times in accordance with the guidance message into the whole fingerprint image, a memory configured to store the whole fingerprint image synthesized by the synthesizing unit, and a collation section configured to collate the fingerprint image received by the fingerprint receiver with at least part of the whole fingerprint image based on a size of the fingerprint image received by the fingerprint receiver.

Independent claim 13 is directed to a fingerprint authentication device adapted to be connected to a terminal device via a

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network. The fingerprint authentication device includes a fingerprint receiver configured to receive a partial fingerprint image transmitted from an external device, a transmitter configured to transmit a guidance message for requesting an input of a fingerprint based on an image size which is transmitted from the terminal device at a time of fingerprint registration, a synthesizing unit which synthesizes partial fingerprint images which are transmitted from the terminal device at plural times in accordance with the guidance message into the whole fingerprint image, a memory configured to store the whole fingerprint image synthesized by the synthesizing unit, a detector configured to detect a plurality of small regions in the whole fingerprint image having a maximum correlation with regard to the fingerprint image received by the fingerprint receiver, and a collation section configured to determine an identity between the fingerprint image received by the fingerprint receiver and the whole fingerprint image based on a position relationship of the plurality of small regions.

Claims 9 and 13 are amended to recite that a small fingerprint image is synthesized to form a large image to be registered as a reference image. In order to implement the above, a guidance message is displayed. As admitted by the Examiner in the Office Action at page 7, lines 10-12 (in

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rejecting claim 11), neither Hoffman nor Hsu disclose that a plurality of partial fingerprint images are transmitted and combined to produce an entire fingerprint image of the user. In order to bridge the gap between claim 11 and Hoffman et al. and Hsu et al., the Examiner relies upon Mainguet, which the Examiner states discloses a fingerprint reader which reads a partial fingerprint image, a fingerprint transmitter which transmits a plurality of partial fingerprint images, and a collation section which includes a synthesizer configured to combine the plurality of partial fingerprint images transmitted from the fingerprint transmitter to produce an entire fingerprint image of the user and collates the entire fingerprint image produced by the synthesizer with the reference fingerprint image. Even though Mainguet teaches a reconstruction of the complete image of the fingerprint from the partial images, Mainguet does not disclose, teach or suggest a guidance message display and reconstruction of the complete image from the partial images which are transmitted via a network as recited in amended claims 9 and 15.

That is, the present claimed invention as defined by claims 9 and 13 is patentable over the cited references, when taken either alone or in combination, because the references do not disclose, teach or suggest, inter alia, a fingerprint authentication device including:

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a transmitting unit which transmits the guidance message to the terminal device in accordance with the readable image size transmitted from the terminal device at the time of fingerprint registration;

a synthesizing unit which synthesizes partial fingerprint images which are transmitted from the terminal device at plural times in accordance with the guidance message into a whole fingerprint image; and/or

a memory configured to store a whole fingerprint image synthesized by the synthesizing unit (see claim 9, lines 22-31; and claim 13, lines 7-16).

Claims 10 and 12 are dependent on claim 9 and are patentable over the cited references in view of their dependence on claim 9 and because the references do not disclose, teach or suggest each of the limitations set forth in claims 10 and/or 12.

Claims 14 and 15 are either directly or indirectly dependent on claim 13 and are patentable over the cited references in view of their dependence on claim 13 and because the references do not disclose, teach or suggest each of the limitations set forth in claims 14 and/or 15.

In view of the foregoing, claims 1, 2, 4, 5, 7-10 and 12-15 are in form for immediate allowance, which action is earnestly solicited.

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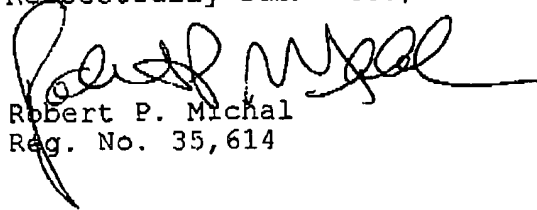
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Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner disagrees with any of the foregoing, the Examiner is respectfully requested to point out where in the references there is support for a contrary view.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,



Robert P. Michal
Reg. No. 35,614

Frishauf, Holtz, Goodman & Chick, P.C.
767 Third Avenue - 25th Floor
New York, New York 10017-2032
Tel. (212) 319-4900
Fax (212) 319-5101
RPM/ms